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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,363	05/08/2001	Hann-Hwan Ju	1014-012US01	2372
28863	7590	05/16/2005	EXAMINER	
SHUMAKER & SIEFFERT, P. A. 8425 SEASONS PARKWAY SUITE 105 ST. PAUL, MN 55125			TANG, KAREN C	
			ART UNIT	PAPER NUMBER
			2151	

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/851,363

Applicant(s)

JU ET AL.

Examiner

Karen C. Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-85 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-85 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

I. Claims 1-14, 16-30, 32-45, 47-61, 63-79, and 81-83 rejected under 35

U.S.C. 102(e) as being anticipated by Wilford et al hereinafter Wilford (US 6,687,247).

1. Referring to Claims 1 and 71, Wilford discloses a routing device comprising (abstract): a plurality of interface modules (refer to Col 1, Lines 1-40) to communicate data packets using a network (1, refer to Fig 1 and Col 1, Lines 30-40); and a router module (210, refer to Fig 2).

Wherein the router module receives the data packets from the plurality of interface module (Queue state interface, and FIA192 Interface, refer to Col 10, Lines 4-67 and Col 11, Lines 1-15) and forwards the data packets between the interface modules in accordance with route information associated with the network (refer to Col 5, 6, 7, 8, 9, and 10).

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2. Referring to Claims 2, 33, and 72, Wilford discloses a fabric Interface (midplane), which coupled to many interfaces, refer to Fig 1. (further comprising a midplane coupled to the plurality of interface modules and to the router module.)

3. Referring to Claims 3, Wilford discloses in Fig 1, Col 1, Lines 30-67, a control circuit (control module), and a control element (concentrator). (wherein the router module comprises a : a packet forwarding engine (145, refer to Fig 1); a concentrator module (130, refer to Fig 1) coupled between the packet forward engine (145, refer to Fig 1) and the plurality of interface module (Queue state interface, and FIA192 Interface, Fig 25).

Wherein the packet forwarding engine receives the packets from the plurality of interface modules (refer to Queue state interface, and FIA192 Interface and connected to 140 and connected to 145, Fig 1) by the concentrator module (130, refer to Fig 1), select routes for the packets (refer to Col 7, Lines 40-65), and forward the packets to the plurality of interface modules via the concentrator module (refer to Fig 1, Lines 40-50), wherein the packet forwarding engine (refer to 145, Fig 1) and the concentrator module (refer to 130, Fig 1) are integrated into a single unit, separate from the interface modules (refer to 111 and 112, Fig 1).

Referring to Claims 34 and 73, Wilford discloses the router module comprises a system control module (190, refer to Fig 1) and at least one concentrator module (refer to 130, Fig 1) integrated into a single unit separate (refer to 110, refer to Fig 1) from the interface modules (refer to 111 and 112, Fig 1).

4. Referring to Claims 4, Wilford discloses at least one memory management circuit (memory management circuit or Queue manager, refer to Col 1, Lines 30-67 and Fig 1) to provide data to the concentrator module from the packets received from the plurality of interface modules (refer to 111 and 112, Fig 1).

4. Referring to Claims 35, and 74, Wilford discloses at least one memory management circuit (memory management circuit or Queue manager, refer to Col 1, Lines 30-67 and Fig 1) to provide data to the concentrator module)

5. Referring to Claims 5, 36, and 75, Wilford discloses in Fig 1, Col 1, Lines 40-67. a memory coupled to the control element (concentrator module) and configured to store the data provided to the control element (concentrator module).

6. Referring to Claims 6, Wilford discloses wherein the concentrator module (refer to 130, Fig 1) assembles output bound packets from data stored in the memory (refer to 150, Fig 1) and forwards the outbound packets (output packet processing, refer to Fig 14) to the plurality of interface modules (refer to Fig 25).

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6. Referring to Claims 20, 37, and 51, Wilford discloses wherein the memory (Fig 1, Col 1, Lines 50-67 and outbound queue manager) is configured to store outbound data (Col 6, Lines 1-25).

7. Referring to Claims 7, Wilford discloses in Fig 1, Col 5, Lines 45-55, where there is a buffer (memory), which buffered the modified packets (incoming packet). (wherein the concentrator module processes inbound packets (refer to 111, Fig 1) received from the plurality of interface modules (Queue state interface, and FIA192 Interface, refer to Fig 25) to remove labels from the inbound packets, and stores data (buffer, Col 5, Lines 45-55) from the processed inbound packets (refer to Col 5, Lines 45-55) in the memory (refer to 150, Fig 1).)

7. Referring to Claim 38, Wilford discloses in Fig 1, Col 5, Lines 45-55, where there is a buffer (memory), which buffered the modified packets (incoming packet). (wherein the memory (buffer, refer to Col 5, Lines 45-55 and Fig 1) is further configured to store inbound data (modified packets, refer to Col 5, Lines 45-55).)

8. Referring to Claims 8, 21, 39, and 52, Wilford discloses wherein the memory comprises an SDRAM device (refer to Fig 2, Col 9, Lines 15-25).

9. Referring to Claims 9 Wilford discloses wherein the memory management circuit (Fig 2, Col 1, Lines 15-30, Col 9, Lines 10-55) is further configured to provide a notification

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(sent the data information) to the packet forwarding engine (refer to 145, Fig 1) based on information extracted (enqueue, refer to Col 9, Lines 10-55) from an incoming data packet (incoming packets, refer to Fig 14.

9. Referring to Claims 22, 40, 53, 65, and 77, Wilford discloses wherein the memory management circuit (lookup controller, refer to Fig 2, Col 1, Lines 15-30, Col 9, Lines 10-55) is further configured to provide a notification (then sent the data information) to based on information extracted (enqueue) from an incoming data packet.

10. Referring to Claims 10, 23, 41, 54, and 66, Wilford discloses wherein the extracted information includes at least one of source address information, destination address information, source port information, and destination port information (refer to Col 1, Lines 15-30 and Col 7, Lines 50-61).

11. Referring to Claims 11, 24, 42, 55, and 67, Wilford discloses wherein the packet forwarding module (refer to 145, Fig 1) is configured to select a route by referencing a forwarding table based on the extracted information (use packet modifier, refer to Col 7, Lines 23-25), and wherein the forwarding table stores (refer to Fig 9, Col 8, Lines 1-20, and Col 19, Lines 45-56 and Col 20, Lines 1-25) the route information for forwarding data packets (refer to Col 7, Lines 40-67 and Col 8, Lines 1-20) received from any of the plurality of interface modules.)

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11. Referring to Claim 77, Wilford discloses wherein the packet forwarding module (refer to 145, Fig 1) is configured to select a route by referencing a forwarding table based on the extracted information (refer to forwarding table, refer to Fig 9, Col 8, Lines 1-20, and Col 19, Lines 45-56 and Col 20, Lines 1-25)

12. Referring to Claims 12, 26, 43, 57, and 79, Wilford discloses a routing engine (routing engine, refer to Col 17, Lines 22-55) to store a routing table (external memory for forwarding table).

13. Referring to Claims 13, 27, 44, and 58, Wilford discloses a memory (refer to Col 17, Lines 35-45) to store the forwarding table (refer to Col 18, Lines 1-30).)

14. Referring to Claims 14, 19, 28, 45, 50, 59 and 64, Wilford discloses in Fig 1 and Fig 2, FIFO Controller, Col 7, Lines 15-50, (memory management circuits) to send (forward) the packet (incoming data packet) to the network physical interface (interface module) based on the header information (selected route). (wherein the memory management circuit (Fig 1 and Fig 2, FIFO Controller, Col 7, Lines 15-50) is configured to forward the incoming data packet to one of plurality of interfaces module (network physical interface) based on the selected route.

15. Referring to Claim 16, Wilford discloses a plurality of interface cards to communicate data packets using a network (refer to Fig 1, Col 1, Lines 30-35), a router

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module (refer to Col 14, 15, 16, 17, 18 and 19) comprising a packet processing circuit (refer to Col 17, Lines 25-35), a memory management circuit (lookup controller, refer to Col 17, Lines 45-55), and a route lookup circuit integrated into a single module (refer to Col 17, Lines 34-55 and Fig 1) separate from the plurality of interface cards (113, and 114, and 210, refer to Fig 2) and a routing engine; and a midplane coupled to the router module and to the plurality of interface cards.)

16. Referring to Claims 17 and 48, Wilford discloses wherein the single module (control element, refer to Fig 1) comprises a single printed circuit card that interconnects the packet processing circuit, the memory management circuit, and the route lookup circuit (refer to Col 1, Lines 30-35, and Col 17, Lines 22-67).

17. Referring to Claims 18 and 49, Wilford discloses a memory (160, refer to Fig 1) coupled to the packet processing circuit and configured to store incoming data (150, refer to Fig 1).

18. Referring to Claims 25, 56, and 68, Wilford discloses refer to Col 20, Lines 9-20, that LookUp Engine (lookup circuit) designed (configure) forwarding table (routing table) to provides the index (longest prefix) to select the output encapsulation (select the route based on the extracted information). (The routing device of claim 24, wherein the route lookup circuit is configured to selected the route by performing a longest prefix match based on the extracted information.)

19. Referring to Claims 29, 60, and 69, Wilford discloses wherein the packet processing circuit is configured to remove an L2 header from an incoming data packet (refer to Col 17, Lines 4-10, 36-45).

20. Referring to Claims 30, 61, and 70, Wilford discloses wherein the packet processing circuit (refer to Col 27, lines 15-35) is configured to build an L2 header for an outbound data packet.

21. Referring to Claims 32 and 82, Wilford discloses a plurality of routing devices coupled to the crossbar arrangement (Fig 2, and Col 1, Lines 30-50), at least one routing device comprising: a plurality of interface modules to communicate data packets using a network (refer to Fig 1, Col 1, Lines 30-35 and refer to Col 1, Lines 5-10); and a router module (refer to Col 14, 15, 16, 17, 18 and 19) separate from the plurality of interface modules (113, 114 and 210 refer to Fig 1) to process the data packets and to forward the data packets between the interface modules.

22. Referring to Claims 47 and 83, Wilford discloses a crossbar arrangement (refer to Fig 1); a plurality of routing devices coupled to the crossbar arrangement (Fig 2, and Col 1, Lines 30-50.), at least one routing device comprising (refer to Fig 1, Col 1, Lines 30-35): a plurality of interface cards to communicate data packets using a network (refer to Fig 1, Col 1, Lines 30-35 and refer to Col 1, Lines 5-10), a router module (refer to Col

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14, 15, 16, 17, 18 and 19) comprising a packet processing circuit (refer to Col 17, Lines 25-35), a memory management circuit (lookup controller, refer to Col 17, Lines 45-55), and a route lookup circuit integrated into a single module (refer to Col 17, Lines 34-55 and Fig 1) separate from the plurality of interface cards (113 and 114, refer to Fig 2) and a routing engine (lookup engine, refer to Col 17, Lines 22-55), and a midplane (fabric Interface) coupled to the router module and to the plurality of interface cards (refer to Fig 1, Col 1, Lines 30-40).

23. Referring to Claim 61, Wilford discloses wherein the packet processing circuit is configured to build an L2 header and rewrite an L3 header for an outbound data packet (refer to Col 27, Lines 55-67 and Col 5, Lines 23-37, Fig 1).)

24. Referring to Claim 63, Wilford discloses an interface concentrator (130, refer to Fig 1) that provides electrical interfaces (refer to Fig 25) to receive incoming packets from a plurality of interface cards (refer to Col 45, Lines 1-35), a packet processing circuit (refer to Col 17, Lines 25-35), a memory management circuit (lookup controller, refer to Col 17, Lines 45-55), and a route lookup circuit to select routes for the incoming packets received from the plurality of interface cards.)

25. Referring to Claim 76, Wilford discloses configuring the memory (Fig 1 and 6 and Col 9, Lines 34-42) to store data associated with at least one of an outbound packet and an inbound packet (refer to Col 9, Lines 15-23, and Col 11, Lines 4-15).)

26. Referring to Claim 81, Wilford discloses providing a plurality of interface cards to communicate data packets using a network; providing a routing module separate from the plurality of interface cards (refer to Col 17, Lines 34-55 and Fig 1) and coupling a router module (refer to Col 14, 15, 16, 17, 18 and 19) comprising a packet processing circuit (refer to Col 17, Lines 25-35), a memory management circuit (lookup controller, refer to Col 17, Lines 45-55), and a route lookup circuit integrated into a single module to the plurality of interface cards via a midplane (fabric Interface, refer to Fig 1).

27. Referring to Claim 82, Wilford discloses a providing a crossbar arrangement (Fig 1); and coupling a plurality of routing devices to the crossbar arrangement (Fig 2, and Col 1, Lines 30-50), at least one routing device comprising: a plurality of interface modules to communicate data packets using a network (Refer to Fig 1, Col 1, Lines 1-40); a route module (refer to Col 14, 15, 16, 17, 18 and 19) separate from the plurality of interface cards to process the data packets and to forward the data packets between the interface modules.)

28. Referring to Claim 83, Wilford discloses providing a crossbar arrangement (refer to Fig 1); and coupling a plurality of routing devices to the crossbar arrangement (Fig 2, and Col 1, Lines 30-50.), at least one routing device comprising: a plurality of interface cards (refer to Fig 1, Col 1, Lines 30-35) to communicate data packets using a network (refer to Col 1, Lines 5-10), a router module (refer to Col 14, 15, 16, 17, 18 and 19)

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comprising a packet processing circuit (refer to Col 17, Lines 25-35), a memory management circuit (lookup controller, refer to Col 17, Lines 45-55), and a route lookup circuit integrated into a single module separate from the plurality of interface cards (refer to Col 17, Lines 34-55 and Fig 1), and a midplane (fabric Interface, refer to Fig 1) coupled to the router module and to the plurality of interface cards (refer to Fig 1, Col 1, Lines 30-40).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

II. Claims 15, 31, 46, 62 and 80, 84, 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilford et al hereinafter Wilford (US 6,687,247) in view of Zadikian et al hereinafter Zadikian (US 6,724,757).

1. Referring to Claims 15, 31, 46, 62 and 80, Wilford discloses a router module to process the data packet and to forward the data packet between the interface modules, refer to Fig 1, Col 1, Lines 1-40.

Wilford does not expressly disclose a redundant router in response to the malfunction of the router module.

Zadikian discloses a redundant router, refer to Col 8, Lines 10-25.

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At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine both Wilford and Zadikian's inventions.

The suggestion/motivation for implemented a redundant part is that Wilford discloses that each routing device/system consists a set of linecards, and each linecard consists of identical parts. Thus it would have been obvious to implement another identical router in the event of system failure.

The benefit would have been that when failure of the router occur, there is always a backup and also can improve the switching speed and minimizes the impact of such redundancy on other connections.

2. Referring to Claim 84, Wilford discloses a crossbar arrangement in Fig 1, a plurality of routing interfaces connected to the crossbar arrangement, in Fig 2, and Col 1, Lines 30-50. Wilford discloses a routing communication device (abstract), which consists plurality of interfaces in the communication system, refer to Fig 1, Col 1, Lines 1-40.

Wilford discloses a plurality of interfaces cards, refer to Fig 1, Col 1, Lines 30-35, for the communication data packets using network, refer to Col 1, Lines 5-10, Refer to Fig 1, Col 1, Lines 1-40, Wilford discloses information is pass from the one of the set input interfaces and forward on to one of a set of output interfaces (plurality of interfaces).

Wilford discloses that the switch fabric (switch arrangement), in the outbound linecard, refer to Col 6, Lines 6-23. he also discloses linecards (plurality of routing device) are interface with communication devices. He also discloses and a router module to process the data packets and to forward the data packets received from any of the

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interface modules in accordance with route information associated with the network (Refer to Fig 1, Col 1, Lines 1-40).

He does not expressly disclose a switch device configured to switch control from a first routing device to a second routing device.

Zadikian discloses in Col 10, Lines 10-50, he discloses a switch element and how a linecards (plurality of routing devices) are connected to two separate copies of the main matrix, and once the error is detected, the switch device would sent the signal to the backup linecard (routing device).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine both Wilford and Zadikian's inventions.

The suggestion/motivation for implemented a redundant part is that Wilford discloses that each routing device/system consists a set of linecards (routing devices), and each linecard consists of identical parts (identical linecards and which one can be a backup copies). He also indicate there is a switch fabric device (switch element), refer to Fig 1 and 2. It would only been obvious for one ordinary skill in the art to implement a switch device which switch from the original router device to the backup router device once the error is detected.

The benefit would have been that when failure of the router occur, there is always a backup and can avoid the traffic congestion.

(A routing arrangement comprising: a plurality of routing devices coupled in a the crossbar arrangement, at least one routing device comprising: a plurality of interface modules to communicate data packets using a network; and a router module to process

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the data packets and to forward the data packets received from any of the interface modules in accordance with route information associated with the network; and a switch arrangement coupled to the plurality of routing devices and configured to switch control from a first routing device to a second routing device.)

3. Referring to Claim 85, Wilford discloses a plurality of interfaces cards, refer to Fig 1, Col 1, Lines 30-35, for the communication data packets using network, refer to Col 1, Lines 5-10, a routing devices comprises packet processing circuit (lookup engine, refer to Col 17, Lines 24-35), memory management circuit (lookup controller, refer to Col 7, Lines 15-50), and all the component are within the Lookup Unit (refer to Col 45-55). A fabric Interface (midplane) coupled to the router device and to the plurality of interfaces cards, refer to Fig 1, Col 1, Lines 30-40. Wilford discloses a crossbar arrangement in Fig 1, a plurality of routing interfaces connected to the crossbar arrangement, in Fig 2, and Col 1, Lines 30-50. Wilford discloses that the switch fabric (switch arrangement), in the outbound linecard, refer to Col 6, Lines 6-23. he also discloses linecards (plurality of routing device) are interface with communication devices. He also discloses route lookup circuit integrated into a single module separate from the plurality of interface cards (refer to 113, 210, and 114, refer to Fig 1)

He does not expressly disclose a switch device configured to switch control from a first routing device to a second routing device.

Zadikian discloses in Col 10, Lines 10-50, he discloses a switch element and how a linecards (plurality of routing devices) are connected to two separate copies of the main

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matrix, and once the error is detected, the switch device would sent the signal to the backup linecard (routing device).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine both Wilford and Zadikian's inventions.

The suggestion/motivation for implemented a redundant part is that Wilford discloses that each routing device/system consists a set of linecards (routing devices), and each linecard consists of identical parts (identical linecards and which one can be a backup copies). He also indicate there is a switch fabric device (switch element), refer to Fig 1 and 2. It would only been obvious for one ordinary skill in the art to implement a switch device which switch from the original router device to the backup router device once the error is detected.

The benefit would have been that when failure of the router occur, there is always a backup and can avoid the traffic.congestion.

(A routing arrangement comprising: a plurality of routing devices coupled in a crossbar arrangement, at least one routing device comprising: a plurality of interface cards to communicate data packets using a network, a router module comprising a packet processing circuit, a memory management circuit, and a route lookup circuit integrated into a single module separate from the plurality of interface cards and a routing engine, and a midplane coupled to the router module and to the plurality of interface cards; and a switch arrangement coupled to the plurality of routing devices and configured to switch control from a first routing device to a second routing device.)

### ***Response to Arguments***

Applicant's arguments filed 5/8/01 have been fully considered but they are not persuasive.

1) In the remark, the applicant argued that (1) Wilford fails to teach or suggest a plurality of interface modules to communication data packets using a network (2) Wilford fails to teach or suggest a router module coupled to each of the plurality of interface modules (3) Wilford fails to teach or suggest a router module that receives the data packets from the plurality of interface modules and forwards the data packets between the interface modules in accordance with the route information associated with the network. (4) Wilford fails to teach or suggest a router module separate from the plurality of interface modules to process data packets and to forward the data packets between the interface modules. (5) Wilford fails to teach or suggest router module comprising a packet processing circuit, a memory management circuit, and a route lookup circuit integrated into a single module separate from a plurality of interface cards. (6) Wilford fails to teach or suggest a router comprising one hardware board integrally housing an interface concentrator that provides electrical interface to receive incoming packets from a plurality of interface cards, a packet processing circuit, a memory management circuit, and a route lookup circuit to select routes for the incoming packets. (7) Wilford fails to teach or suggest a concentrator module coupled between the packet forwarding engine and the plurality of interface modules, wherein that packet forwarding engine receives the packets from the plurality of interface modules by the concentrator modules, selects

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routes for the packets and forwards the packets to the plurality of interface modules via the concentrator module. (8) Wilford fails to teach or suggest a packet forwarding engine that provides routing functions for data packets received from different interface modules via an interface concentrator. (9) Wilford fails to teach or suggest a packet forwarding module that selects routes by referencing a forwarding table (10) Wilford fails to teach or suggest a packet forwarding engine that selects routes to forward packets using a forwarding table that stores route information for forwarding data packets received from any of the different interface modules. (11) Wilford fails to disclose or suggest the inventions defined by Applicants' claims, and provide no teaching that would have suggested the desirability of modification.

2) Examiner respectfully traverse the argument:

Examiner is interpreting the claims language broadest possible, therefore, as to point

(1) Wilford teaches plurality of interface modules (input interface, output interface, refer to Fig 1, and Queue States Interface, FIA192 Interface, refer to Fig 25) communicate data using a network (refer to Col 1, Lines 10-30) that the routing device which consists of plurality of interface modules, utilizing network to received data and processed data accordingly. (2) Wilford teaches router module (Look up Unit, refer to Col 17, Lines 20-30) which coupled with interfaces (network physical interfaces, 210, 130 and 114 and fabric interface, 170, refer to Fig 2). (3) Wilford teaches router module (Look up Unit, refer to Col 17, Lines 20-30) receive the information from (210, and 113, refer to Fig 2)

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and forward the packets to (170, refer to Fig 2) and then forward back to (114 and 210, refer to Fig 2), which is associate with the network (refer to Col 19, Lines 45-67 and Col 20, Lines 1-25). (4) Wilford teaches the router module separate from the plurality of interface modules (see Fig 2, the interface modules 114, 210, 170 are not connected directly with the interface module, they are separate entities) and forward the data packets between the interface modules (refer to Fig 2 and see (3) above to explanation). (5) Wilford teaches router module (Lookup Unit) consists of packet processing circuit (look up engine, refer to Col 17, Lines 25-35), memory management circuit (lookup controller, refer to Col 17, Lines 45-55), and a route lookup circuit integrated into a single module separate from a plurality of interface cards (processing circuit, memory management, etc are all within the Lookup Unit, refer to Col 17, Lines 45-55). (6) Wilford teaches a router comprises a hardware board integrally housing an interface concentrator that provides electrical interface (Look up unit is within the linecard, which is a hardboard, refer to Col 17, Lines 20-67 and Col 18, Lines 5-50). (7) Wilford teaches

(8) Wilford teaches packet forwarding engine (145, refer to Fig 1 and ASIC, refer to Fig 25) that provides routing function (forwarding table lookup, which is a routing function, refer to Col 17, Lines 24-67) for data packets received from different interface modules (Queue Status Interface, FIA192 Interface, refer to Fig 25) via an interface concentrator (refer to 130, Fig 2).

(9) Wilford teaches packet forwarding module that selects routes by referencing a forwarding table (refer to Col 17, Lines 20-67, and Col 18, Lines 1-40, the forwarding

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table within the look up unit checks the IP header and then lookup unit perform the forward decision to the necessary destination.).

(10) Wilford teaches forward packets using a forwarding table that stores route information for forwarding data packets (refer to Col 17, Lines 20-67, and Col 18, Lines 1-40, the forwarding table within the look up unit checks the IP header and then lookup unit perform the forward decision to the necessary destination) received from any of the different interface module (Queue Status Interface, and FIA192 Interface, refer to Fig 25).

(11) In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, examiner believes that the suggestion/motivation for implemented a redundant part is that Wilford discloses that each routing device/system consists a set of linecards (routing devices), and each linecard consists of identical parts (identical linecards and which one can be a backup copies). He also indicate there is a switch fabric device (switch element), refer to Fig 1 and 2. It would only been obvious for one ordinary skill in the art to implement a switch device which switch from the original router device to the backup router device

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once the error is detected. The benefit would have been that when failure of the router occur, there is always a backup and can avoid the traffic congestion.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this Office action is set to expire **THREE MONTHS** from the mailing date of this action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen C. Tang whose telephone number is (571)272-3116. The examiner can normally be reached on M-F 7 - 3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571)272-3939. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**ZARNI MAUNG**  
**SUPERVISORY PATENT EXAMINER**

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